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PEGGY M. HATCH
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.

Agency Interest (AI) No.: 286
Activity No.: PER20090019

Mr. D.L. Schuessler
Site Manager
Baton Rouge Chemical Plant
ExxonMobil Chemical Company
P.O. Box 241
Baton Rouge, LA 70821-0241

RE: Emission Reduction Credits, Use of VOC Credits for Maintrain Ethylene Production Facilities, Permit No. 2031-V8, Baton Rouge Chemical Plant (BRCP), ExxonMobil Chemical Company, Baton Rouge, East Baton Rouge Parish, Louisiana

Dear Mr. Schuessler:

By permit application dated December 18, 2009, ExxonMobil Chemical Company notified the Department that a planned modification to the Maintrain Ethylene Production Facilities would result in a project increase of 3.00 tons and a net increase of 151.21 tons of VOC. The application for the modification was deemed administratively complete on January 18, 2010. To meet the requirements of LAC 33:III.504.M.3, the 3.00 ton VOC project increase will be offset at a 1.5 to 1.0 ratio with 4.50 tons of VOC credits. ExxonMobil requested to use the balance of 3.49 tons of VOC Emission Reduction Credits (ERCs) remaining on Certificate 286PER20080006, granted December 1, 2008, and associated with the modification to the Maintrain Unit under Permit 2031-V7, issued December 1, 2008. The remaining 1.01 tons of VOC offsets required were generated by replacement of the OLA-1X gas turbine driver, Emission Point No. S-04, in the Refinery Gas Recovery Unit of BRCP (Permit 2361-V1) with an electric motor. The conversion and emissions reduction was completed on February 7, 2009.

Total VOC ERC:

<u>Source</u>	<u>Allowable Emissions Before Reduction¹</u>	<u>Actual Emissions²</u>	
OLA-1X Turbine	2.04	1.87	1.87
	Adjusted allowable emissions (§607.C.3):		2.04
	Baseline emissions (§607.C.4):		1.87 ³
	Allowable emissions after reduction (§607.C.5):		0
	Surplus emission reduction (§607.C.6):		1.87
	Adjustments for netting (§607.D):		-0
	Total ERC:		1.87

¹ Weighted average permitted VOC emissions for OLA-1X turbine for Permit Nos. 2361 (M-1), 2361-V0 and 2361-V1 in effect during baseline period of 2005 and 2006.

² Average of 2005 and 2006 actual emissions (§607.C.2).

³ Baseline emissions shall be the lower of actual emissions or adjusted allowable emissions when the design value is not above the NAAQS for ozone. (§607.C.4.a.ii).

Analysis of Validity

Timeliness

Per §615.A, all applications for banking emission reductions shall be submitted by March 31 following the year in which the reductions occurred. Replacement of the OLA-1X turbine driver was completed February 7, 2009. The replacement was included in the BRCP banking report submitted February 29, 2008 as a planned reduction. The application to use the credits generated was contained in the permit application for modification of the Maintrain Ethylene Facilities dated December 18, 2009.

Emissions reductions can be recognized as ERC only if they are determined to be surplus, permanent, quantifiable, and enforceable. Each criterion is addressed below.

Surplus

Procedures for calculating the surplus emission reduction are outlined in §607.C & D.

1. The design value for the nonattainment area is below the 1-hour national ambient air quality standard (NAAQS) for ozone. Per §607.C.4.ii, if the design value for the nonattainment area is not above the 1-hour national ambient air quality standard (NAAQS) for ozone, the department shall compare the actual emissions with the adjusted allowable emissions in order to determine baseline emissions.
2. Calculate actual emissions during the baseline period. Actual emissions during the baseline period of 2005 and 2006 were checked against the department's emission inventory database. VOC emissions during the baseline period were calculated to be 1.87 TPY.
3. Calculate adjusted allowable emissions. Allowable emissions shall be adjusted to account for all new or revised federal or state regulations adopted that will require, or would have required, all or a portion of the emission reductions that comprise the ERC application. Turbine OLA-1X operates in the Refinery Gas Recover (RGR) Unit of the Baton Rouge Chemical Plant. At the time of replacement of Turbine OLA-1X driver, the RGR Unit was operating under Permit No. 2361-V1, issued August 15, 2006. During the baseline period of 2005-2006, the RGR unit was subject to Permit No. 2361 (M-1) issued January 21, 1998 (as amended May 5, 1999); to Title V Permit No. 2361-V0, issued May 20, 2005; and to Permit No. 2361-V1, issued August 15, 2006. Under these three permits, the gas turbine was not subject to any federal standards, e.g., 40 CFR 60 Subpart GG-Standards of Performance for Stationary Gas Turbines. The gas turbine was not subject to any state standards requiring control devices for VOC emissions. The turbine was subject to the NO_x standards of LAC 33:III.Chapter 22 under Permit Nos. 2361-V0 and 2361-V1. A lean head-end combustion liner was installed to meet the NO_x standard but this control device did not affect VOC emissions; also, it was installed in 2003, before the baseline period began.

The permitted VOC emissions for the gas turbine under the three permits listed above were 2.83, 1.75, and 2.19 TPY for permits 2361(M-1), 2361-V0 and 2361-V1, respectively.. The slight changes were brought about by a change in emission factor and a recalculation of the maximum fuel flow consumed by the turbine. The VOC permit limits were calculated using AP-42 factors, with the largest change occurring when EPA reduced the AP-42 factor in April 2000 for VOC for stationary gas turbines. Allowable VOC emissions of 2.04 TPY were calculated as a weighted average of permitted VOC emissions in effect during the baseline period. Since no new or revised federal or state regulations would have required VOC reductions by January 18, 2010 (administrative completeness date for the current

Maintain Unit permit modification application), no adjustment of allowable emissions during the baseline period is required. Therefore, adjusted allowable emissions for OLA-1X turbine are the same as allowable emissions, and total 2.04 TPY.

4. Quantify baseline emissions. Per §607.C.4.a.ii, if the design value is not above the NAAQS for ozone, baseline emissions shall be the lower of actual emissions (step 2 above) or adjusted allowable emissions determined in accordance with §607.C.3 (step 3 above). In this case, actual emissions are the limiting factors. Baseline emissions for VOC total 1.87 TPY.
5. Calculate allowable emissions after the reductions occurred. The OLA-1X Turbine driver was replaced with an electric motor on February 7, 2009. Since the gas turbine is no longer an emissions source, OLA-1X Turbine, Emission Point No. S-04, has been deleted from the pending modification and renewal Title V permit application dated July 28, 2009 for the Refinery Gas Recovery Unit (proposed Permit No. 2361-V2). Therefore, allowable emissions after reductions have occurred are zero TPY.
6. Calculate the surplus emission reduction by subtracting the allowable emissions after the reduction occurred from the baseline emissions.

$$1.87 \text{ TPY} - 0 \text{ TPY} = 1.87 \text{ TPY}$$
7. Finally, adjust for netting (§607.D). Emission reductions used in a netting analysis (i.e., to determine the *net emissions increase* as defined in LAC 33:III.504 or 509, as appropriate) that prevented the increase from being considered "significant" are not eligible for use as offsets. The quantity of emission reductions utilized to "net out" shall not be considered creditable. There is zero adjustment for netting as the emission reductions were not used in a netting analysis.

$$1.87 \text{ TPT} - 0 \text{ TPY} = 1.87 \text{ TPY}$$

Permanent

The reduction is permanent because OLA-1X Turbine driver, Emission Point No. S-04, was replaced with an electric motor under Authorization to Construct issued March 27, 2007 and will be deleted in the pending Permit 2361-V2 (application dated July 28, 2009).

Quantifiable

Actual emissions from the gas turbine were calculated using approved EPA methods, EPA emission factors, fuel consumption, and other process and production data.

Enforceable

Finally, the reductions will be enforceable via Permit No. 2361-V2. Operation of the OLA-1X gas turbine after issuance of Permit 2361-V2 either in the RGR unit or in any other unit in the Baton Rouge Chemical Plant would be in violation of LAC 33:III.501.C.2 and Section 2055 of the Louisiana Environmental Quality Act.

Please find enclosed your Emission Reduction Credit (ERC) Certificate to reflect the creditable VOC reductions realized by replacement of the OLA-1X gas turbine in the Refinery Gas Recovery Unit in the Baton Rouge Chemical Plant.

A notice requesting public comment on the ERC Certificates was published in the *The Advocate* on February xx, 2010. A copy of the public notice was mailed to concerned citizens listed in the



Louisiana Department of Environmental Quality Emission Reduction Credit Certificate

Item Number: 286PER20090019
Owner: ExxonMobil Chemical Company
Phone number: (225) 977-4221
Company Address: PO Box 241
 Baton Rouge, Louisiana 70821-0241

EMISSION REDUCTION INFORMATION

Physical

Location: 4949 Scenic Highway, Baton Rouge, East Baton Rouge Parish

Method of ERC creation: Replacement of gas turbine driver in OLA-1X Turbine in Refinery Gas Recovery Unit with an electric motor (Activity Number PER20090012).
 ERC balance reduced by 1.01 tons of VOC to offset modification to Maintrain Ethylene Unit (Activity Number PER20090019).

Pollutant: VOC (tons)

Amount Generated	1.87
Amount Offset for Project	1.01
Balance	0.86

Date of emission reduction: February 7, 2009

Assistant Secretary

Date